

## **Remarks**

The above Amendments and these Remarks are in reply to the Office Action mailed January 22, 2003 (the "Office Action") in light of the Advisory Action mailed April 7, 2003 (the "Advisory Action"). In the Office Action, claims 2-5, 8, and 10-11 were rejected under 35 U.S.C. §112, second paragraph, claim 1 was rejected under 35 U.S.C. §102(b), and claims 2-8, and 10-11 were rejected under 35 U.S.C. §103(a). In the Advisory Action, the Examiner stated that the Applicants have overcome the 35 U.S.C. §112, second paragraph rejection with regard to claims 2 and 8.

### **I. RESPONSE TO REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH**

In light of the Advisory Action, claims 3-5 and 10-11 remain rejected under 35 U.S.C. §112, second paragraph.

#### **A. Dependent Claims 3-5**

With regard to claims 3-5, the Examiner maintains that the recitation that the number of stockers may be "varied between one and ..." is indefinite because claim 1 requires "at least two stockers." Dependent claims 3-5 depend directly from independent claim 1. Applicants have amended claim 1 to clarify that the workpiece management system recited in claim 1 only requires "a stocker." Accordingly, the recitation in claims 3-5 that requires "between one and ..." is not indefinite. Thus, Applicants respectfully request the Examiner to remove this rejection.

#### **B. Dependent Claims 10 and 11**

Claims 10-11 have been cancelled. Thus, no response is required.

### **II. RESPONSE TO REJECTIONS UNDER 35 U.S.C. §102(b)**

In paragraph 4 of the Office Action mailed January 22, 2003, the Examiner rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,829,939 issued to Iwai et al. ("*Iwai*").

The apparatus disclosed in *Iwai* removes cassettes from a SMIF pod and stores the cassettes within an isolated storage environment. As shown in Fig. 24 of *Iwai*, a SMIF pod is placed into a pass box 210 in which the pod shell 212 is removed from the pod door 214. A cassette transfer device 322 removes the cassette 211 from the pass box 210 and raises the cassette 211 up to a cassette stock stage 320. The cassette stock stage 320 "holds a plurality of cassettes 211." *Iwai*, col. 32, lines 38-40. The cassettes 211 are stored in the cassette stock stage 320 until the wafers 205 are ready for processing. At that time, the cassette transfer 322 lowers the cassette 211 from the cassette stock stage 320 to a transfer stage 324. Once the cassette 211 is seated on the transfer stage 324, a transfer unit 263 extracts the wafers 205 from the cassette 211 and places the wafers 205 into a wafer boat 261 for processing.

**A. Independent Claim 1 Patently Distinguishes over *Iwai***

Amended claim 1, in part, recites:

"a stocker having a storage area isolated from the ambient environment, said stocker adapted to store each workpiece in said storage area after the workpiece has been removed from the container; and  
a workpiece transfer mechanism for transferring each workpiece between the container and said storage area."

The apparatus disclosed in *Iwai* utilizes the cassette stock stage 320 as a storage area for cassettes 211. The cassette stock stage 320 stores cassettes 211 after they have been removed from the SMIF pod 209. Unlike the "storage area" disclosed in claim 1, the cassette stock stage 320 disclosed in *Iwai* cannot store individual wafers 205. The cassette transfer 322 disclosed in *Iwai* removes the cassette 211 from the pass box 210 after the pod door 214 is separated from the pod shell 212. The cassette transfer 322 transfers the cassette 211 up to the cassette stock stage 320 where the cassette 211 remains until the wafers in the cassette 211 are ready for processing. Thus, *Iwai* does not disclose storing "each workpiece in said storage area after the workpiece has been removed from the container."

Moreover, *Iwai* does not teach "a workpiece transfer mechanism for transferring each workpiece between the container and said storage area." In contrast, the wafer transfer 322 disclosed in *Iwai* transfers cassettes 211 between the container 209 and

the stock stage 320. The wafer transfer 322 never removes the wafers 205 from the cassette 211. In fact, the wafer transfer 322 can only engage and transfer a cassette 211. The wafer transfer 322 cannot engage or transfer a wafer 205. Accordingly, *Iwai* does not disclose every element recited in claim 1. Therefore, Applicants respectfully suggest that the system recited in claim 1 is not anticipated by *Iwai*.

### III. RESPONSE TO REJECTIONS UNDER 35 U.S.C. §103(a)

In paragraphs 5-7 of the Office Action mailed January 22, 2003, the Examiner rejected claims 2-8 and 10-11 under 35 U.S.C. §103(a) as being unpatentable over several combinations of the following references:

- (1) U.S. Patent No. 5,829,939 issued to Iwai et al. ("*Iwai*");
- (2) U.S. Patent No. 4,999,671 issued to Iizuka ("*Iizuka*"); and
- (3) U.S. Patent No. 4,867,629 issued to Iwasawa et al. ("*Iwasawa*").

A summary of *Iwai* has been provided above.

The reticle conveying device disclosed in *Iizuka* utilizes a cassette library 2 as the storage area. Reticle cassettes 4, each containing a reticle 6, are vertically stacked in the cassette library 2. The reticle cassettes 4 remain in the cassette library 2 until the reticle 6 is ready to be processed. The reticles 6 travel throughout the conveying device within a reticle cassette 4. The only time a reticle 6 is removed from a reticle cassette 4 is for processing. The cassette library 2 disclosed in *Iizuka* cannot store a reticle 6 unless the reticle 6 is stored within a reticle cassette 4.

*Iwasawa* discloses a dust-tight storage cabinet that stores wafer cassettes 44. The wafer cassettes 44 pass into and out of the cabinet through an entrance 48. *Iwasawa*, Figs. 2-3. When a cassette 44 enters the storage cabinet, the cassette 44 is initially stored on a receiving plate 94. A transfer mechanism 96 transfers the cassette 44 from the receiving plate 94 to a vacant cassette compartment 92. The cassette compartments 92 open radially outward from a rotation shaft 70 so that the transfer mechanism 96 may access any of the cassette compartments 92. The storage cabinet disclosed in *Iwasawa* never removes a wafer from the cassette 44.

**A. *Iwai* in view of *lizuka***

In paragraph 5 of the Office Action, the Examiner rejected claims 3-7 under 35 U.S.C. §103(a) as being unpatentable over *Iwai* in view of *lizuka*.

Dependent claims 3-7 depend directly or indirectly from independent claim 1. These dependent claims include all of the limitations of the independent claim from which it depends. Amended claim 1, in part, recites:

“a stocker having a storage area isolated from the ambient environment, said stocker adapted to store each workpiece in said storage area after the workpiece has been removed from the container; and  
a workpiece transfer mechanism for transferring each workpiece between the container and said storage area.”

As previously discussed above with regard to claim 1, the cassette stock stage 320 disclosed in *Iwai* cannot store individual wafers. The cassette stock stage 320 only stores cassettes 211. Accordingly, the height of a cassette 211 is the minimum distance allowed between each storage shelf located within the cassette stock stage 320. The system recited in claim 1 of the present invention achieves a higher storage density than the cassette stock stage 320 disclosed in *Iwai*. The system recited in claim 1 removes the workpiece from the cassette before storing the workpiece. Accordingly, the workpieces may be stored closer together.

Moreover, the cassette transfer 322 in *Iwai* is only capable of engaging and transferring cassettes 211 between the container 209 and the stock stage 320. The wafer transfer 322 cannot engage a wafer 205 or transfer a wafer 205 between the container 209 and the stock stage 320. *Iwai* does not suggest modifying the cassette transfer 322 to transfer individual wafers 205 between the container 209 and the stock stage 320. Therefore, the system recited in claim 1 is not obvious over *Iwai*.

Further, the device disclosed in *lizuka* does not provide the elements lacking in *Iwai*. In *lizuka*, a reticle 6 stored in the library 2 must be contained within a reticle cassette 4 at all times. *lizuka* provides no motivation to modify the library 2 to store individual reticles 6 without being contained in a cassette 4. The system recited in claim 1 of the present invention eliminates the need for the reticle cassette 4 in *lizuka*. Further, the system recited in claim 1 of the present invention achieves a higher storage density than the cassette library 2 in *lizuka*. The cassettes 4 in *lizuka* are wider than an

individual workpiece and thus the storage capacity of the cassette library 2 is less than the "stocker" recited in claim 1 of the present invention. Therefore, the system recited in claim 1 is not obvious over *Iwai* in view of *Iizuka*.

**B. *Iwai* in view of *Iwasawa***

In paragraph 6 of the Office Action mailed January 22, 2003, the Examiner rejected claims 2 and 8 under 35 U.S.C. §103(a) as being unpatentable over *Iwai* in view of *Iwasawa*.

**1. Dependent Claim 2 Patentably Distinguishes over *Iwai* in view of *Iwasawa***

Dependent claim 2 depends directly from independent claim 1. Dependent claim 2 includes all of the limitations of the independent claim from which it depends. Claim 1, in part, recites:

"a stocker having a storage area isolated from the ambient environment, said stocker adapted to store each workpiece in said storage area after the workpiece has been removed from the container; and  
a workpiece transfer mechanism for transferring each workpiece between the container and said storage area."

As previously discussed above with regard to claim 1, the cassette stock stage 320 in *Iwai* stores cassettes - not individual wafers. Further, *Iwai* does not suggest modifying the cassette transfer 322 to transfer wafers 205 between the container 209 and the stock stage 320. Therefore, for at least the reasons stated above with regard to claim 1, the system recited in claim 2 is not obvious over *Iwai*.

Moreover, the cabinet disclosed in *Iwasawa* does not provide the elements lacking in *Iwai*. In contrast to the present invention, *Iwasawa* stores cassettes and not individual wafers after they have been removed from the cassette. In *Iwasawa*, after a cassette 44 enters the cabinet, a transfer mechanism 96 places the cassette 44 into a compartment 92. The transfer mechanism 96 in *Iwasawa* is adapted to engage a cassette 44 and transfer the cassette 44 between the compartment 92 and the shelf 94. The transfer mechanism 92 cannot engage a wafer or transfer a wafer between the compartment 92 and the shelf 94. Further, *Iwasawa* does not suggest that the compartments 92 can be modified to store individual wafers. Therefore, Applicants

respectfully suggest that the system recited in claim 2 is not obvious over *Iwai* in view of *Iwasawa*.

**2. Independent Claim 8 Patently Distinguishes over *Iwai* in view of *Iwasawa***

Amended claim 8, in part, recites:

“a reticle stocker having a storage area that is isolated from the ambient environment, said reticle stocker being capable of storing the reticles in said storage area that have been removed from the SMIF pod;

...

a reticle transfer mechanism for transferring reticles between said slots and between said slots and the SMIF pod.”

As previously discussed above, the cassette stock stage 320 disclosed in *Iwai* cannot store individual wafers 205. The cassette transfer 322 is adapted to engage and transfer the a cassette 211 between a container 209 and the cassette stock stage 320. *Iwai* does not suggest that the cassette transfer 322 can be modified to engage and transfer wafer 205 between the container 209 and the cassette stock stage 320. Thus, the apparatus disclosed in *Iwai* cannot store wafers 205 in the cassette stock stage 320. Therefore, for at least the reasons set forth above with regard to claim 1, the system recited in claim 8 is not obvious over *Iwai*.

Moreover, each chamber 92 in *Iwasawa* stores a cassette 44 and not an individual wafer. The transfer mechanism 96 in *Iwasawa* is only adapted to engage a cassette 44 and transfer cassettes 44 between the compartment 92 and the receiving plate 94. The transfer mechanism 96 cannot engage a wafer or transfer a wafer between the compartment 92 and the receiving plate 94. Therefore, for at least the reasons set forth with regard to claim 1, the system recited in claim 8 is not obvious over *Iwai* in view of *Iwasawa*.

**C. *Iwai* in view of *Iwasawa*, and further in view of *Iizuka***

In paragraph 7 of the Office Action mailed January 22, 2003, the Examiner rejected claims 10 and 11 under 35 U.S.C. §103(a) as being unpatentable over *Iwai* in

view of *Iwasawa*, and further in view of *Iizuka*. Claims 10-11 have been cancelled and therefore, no response is required with regard to claims 10-11.

### Other Remarks

The references cited by the Examiner but not relied upon have been reviewed, but are not believed to render the claims unpatentable, either singly or in combination.

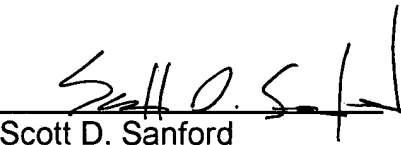
In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 50-0639 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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